

3275. K-th Nearest Obstacle Queries

Solved ●

Medium Topics Hint

There is an infinite 2D plane.

You are given a positive integer k . You are also given a 2D array `queries`, which contains the following queries:

- `queries[i] = [x, y]`: Build an obstacle at coordinate (x, y) in the plane. It is guaranteed that there is **no** obstacle at this coordinate when this query is made.

After each query, you need to find the **distance** of the k^{th} **nearest** obstacle from the origin.

Return an integer array `results` where `results[i]` denotes the k^{th} nearest obstacle after query i , or `results[i] == -1` if there are less than k obstacles.

Note that initially there are **no** obstacles anywhere.

The **distance** of an obstacle at coordinate (x, y) from the origin is given by $|x| + |y|$.

Example 1:

Input: `queries = [[1,2],[3,4],[2,3],[-3,0]]`, $k = 2$

Output: `[-1,7,5,3]`

Explanation:

- Initially, there are 0 obstacles.
- After `queries[0]`, there are less than 2 obstacles.
- After `queries[1]`, there are obstacles at distances 3 and 7.
- After `queries[2]`, there are obstacles at distances 3, 5, and 7.
- After `queries[3]`, there are obstacles at distances 3, 3, 5, and 7.

Example 2:

Input: `queries = [[5,5],[4,4],[3,3]]`, $k = 1$

Output: `[10,8,6]`

Explanation:

- After `queries[0]`, there is an obstacle at distance 10.
- After `queries[1]`, there are obstacles at distances 8 and 10.
- After `queries[2]`, there are obstacles at distances 6, 8, and 10.

Constraints:

- $1 \leq \text{queries.length} \leq 2 \cdot 10^5$
- All `queries[i]` are unique.
- $-10^9 \leq \text{queries[i][0]}, \text{queries[i][1]} \leq 10^9$
- $1 \leq k \leq 10^5$

Seen this question in a real interview before? 1/5

Yes No

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